POSITIONS AND AREAS OF SUN SPOTS, JULY, 1930

[Communicated by Capt. J. F. Hellweg, Superintendent United States Naval Observatory. Data furnished by Naval Observatory, in cooperation with Harvard, Yerkes, Perkins, and Mount Wilson Observatories. The differences of longitude are measured from central meridian, positive west. The north latitudes are plus. Areas are corrected for foreshortening and are expressed in millionths of sun's visible hemisphere. The total area, including spots and groups, is given for each day in the last column]

Date	Eastern standard civil time	Heliographic			Area		Total area for each day
		Diff. long.	Longitude	Latitude	Spot	Group	
1930	h m	°	°	°			
July 1 (Naval Observatory)	10 16	−28.5	235.8	−25.5	6		
		−21.0	243.3	+13.5	18		
		+1.0	265.3	+13.0		31	55
July 2 (Naval Observatory)	11 1	−72.0	178.6	+7.0	31		
		−63.5	187.1	−6.5		31	
		−8.5	242.1	+13.5		9	
		+15.5	266.1	+12.5		3	74
July 3 (Naval Observatory)	11 1	−62.0	175.4	+7.5		46	
		−48.0	189.4	−6.5		15	
		−16.5	220.9	−9.5	3		
		+6.0	243.4	+13.5	6		
		+32.0	269.4	+13.0	6		76
July 4 (Naval Observatory)	10 35	−49.0	175.4	+8.4		28	
		−32.0	192.4	−6.0	12		40
July 5 (Naval Observatory)	11 10	−35.0	175.8	+7.0		9	
		−18.0	192.8	−7.0		18	27
July 6 (Naval Observatory)	11 28	−21.0	176.4	+8.0		15	
		−4.5	192.9	−7.0		12	27
July 7 (Naval Observatory)	10 47	−60.0	124.6	+21.0	31		
		−8.5	176.1	+7.5		22	
		+7.5	192.1	−7.5		12	65
July 8 (Naval Observatory)	11 33	+18.5	189.4	−6.0		28	28
July 9 (Naval Observatory)	10 42	−67.5	90.6	−5.5	9		
		+45.5	203.6	+4.0		170	179
July 10 (Naval Observatory)	10 45	−54.5	90.4	−5.0	6		
		+59.5	204.4	+4.0		201	207
July 11 (Naval Observatory)	11 54	+32.5	163.5	+12.0	6		
		+73.5	204.5	+4.5		216	222
July 12 (Naval Observatory)	10 22	−52.5	66.1	−7.0		46	
		−26.5	92.1	−0.5	6		52
July 13 (Naval Observatory)	10 25	−37.5	67.9	−7.0		108	108
July 14 (Naval Observatory)	14 3	−24.0	66.2	+7.5		170	
		−20.0	70.2	−7.0		9	179
July 15 (Naval Observatory)	10 53	−12.0	66.7	+7.5		170	
		−8.0	70.7	−7.5		18	188
July 16 (Naval Observatory)	10 34	−7.5	68.1	+7.0	2		
		+6.5	72.1	−7.0		170	172
July 17 (Naval Observatory)	10 33	+21.0	73.4	−7.0		139	139
July 18 (Naval Observatory)	10 53	+36.5	75.5	−6.0	123		123
July 19 (Naval Observatory)	10 46	+51.0	76.8	−5.5	108		108
July 20 (Naval Observatory)	10 46	−80.0	292.6	−10.0	15		
		+66.5	79.1	−6.0		123	138
July 21 (Naval Observatory)	10 49	−76.5	282.8	+3.0	62		
		−66.0	293.3	−10.0	9		
		+80.5	79.8	−6.0		139	210
July 22 (Naval Observatory)	10 19	−63.5	282.6	+3.0	62		
		−63.5	292.6	−10.0	12		
		−38.5	307.6	+16.0	3		77
July 23 (Naval Observatory)	11 19	−61.5	271.1	−12.5	46		
		−50.5	282.1	+2.5	9		
		−40.0	292.6	−10.0	6		61
July 24 (Naval Observatory)	10 17	−80.0	239.6	+2.5	77		
		−50.0	269.6	−13.0	6		
		−37.5	282.1	+2.5	37		120

Positions and areas of sun spots, July, 1930—Continued

Date	Eastern standard civil time	Heliographic			Area		Total area for each day
		Diff. long.	Longitude	Latitude	Spot	Group	
1930	h m	°	°	°			
July 25 (Naval Observatory)	11 10	−66.5	239.7	+2.5	62		
		−24.0	282.2	+3.0	31		93
July 26 (Naval Observatory)	10 48	−54.5	238.7	+2.5	62		
		−11.0	282.2	+3.0	15		77
July 27 (Naval Observatory)	10 28	−62.0	218.1	−4.5	3		
		−41.5	238.6	+2.0		77	
		−21.0	259.1	+13.0	2		
		+2.5	282.6	+3.0	9		91
July 28 (Naval Observatory)	10 50	−47.5	219.2	−4.5	3		
		−28.5	238.2	+1.0		93	
		−9.5	257.2	−11.5		18	
		−6.0	260.7	+12.5	6		
July 29 (Naval Observatory)	10 48	+15.0	281.7	+3.5	6		126
		−33.5	220.0	−5.0	3		
		−15.0	238.5	+1.5		62	
		+5.0	258.5	−11.0	3		
		+9.0	262.5	+12.0	3		
		+28.5	282.0	+3.5	3		74
July 30 (Naval Observatory)	10 47	−1.0	239.3	+1.5	34		34
July 31 (Naval Observatory)	11 11	−66.5	160.3	−9.0	9		
		+12.0	238.8	+1.5	25		34
Mean daily area for July							103

PROVISIONAL SUN-SPOT RELATIVE NUMBERS, JULY, 1930 [1]

[Data furnished through the courtesy of Prof. W. Brunner, University of Zurich, Switzerland]

July, 1930	Relative numbers	July, 1930	Relative numbers	July, 1930	Relative numbers
1	a 22	11		21	25
2	36	12	Ec 26	22	14
3	35	13	16	23	22
4	28	14	24	24	a 14
5	26	15	25	25	15
6	28	16	a 24	26	16
7	18	17	29	27	18
8	18	18	9	28	34
9	Wc 39	19	8	29	33
10	21	20	9	30	10
				31	19

Mean (30 days) = 22.0.

[1] Dependent alone on observations at Zurich and its station at Arosa.
a = Passage of an average-sized group through the central meridian.
c = New formation of a large or average-sized center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central zone.